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Notes on Some European Species of *Pamphilius* LATREILLE
(Hymenoptera, Pamphiliidae), with Description
of a New Species from Rumania

By

Akihiko SHINOHARA

Department of Zoology, National Science Museum, Tokyo

and

Andreas TAEGER

Institut für Pflanzenschutzforschung Kleinmachnow,
Eberswalde-Finow, DDR

Abstract *Pamphilius nigrifemoratus* n. sp., a close relative of *P. pallipes* (ZETTERSTEDT), is described from Rumania. New distributional data are given for eight European species of *Pamphilius*.

The European fauna of the sawfly genus *Pamphilius* is fairly well known, but new records and, possibly, species may be anticipated resulting from careful investigation of hitherto unknown faunas and by the use of more sophisticated and varied collecting techniques. In a review of the European Pamphiliidae, ACHTERBERG and AARTSEN (1986) enumerated 28 species of the genus, whereas ten years before the number was 25 (BENEŠ, 1976). The increase in number was due to the discovery of two new species (*P. festivus* PESARINI et PESARINI, 1984, and *P. viridipes* ACHTERBERG et AARTSEN, 1986) and the difference in interpretation of the taxonomic status of *P. nigricornis* (Snellen van VOLLENHOVEN).

In the following lines, we will describe a new species from Rumania and give additional information on the distribution of some European *Pamphilius*, together with some taxonomic notes. The new faunal data are based mainly on the junior author's studies of the collection of the Institut für Pflanzenschutzforschung (former Deutsches Entomologisches Institut, DEI), his own collection and parts of the collection of the Zoologisches Museum der Humboldt-Universität zu Berlin (HU).

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Pamphilius alternans (COSTA, 1859)

This species has been recorded from France, Belgium, Germany, Italy, Switzerland, Austria, Czechoslovakia, Hungary (KLIMA, 1937), the Netherlands (OOSTSTROOM, 1974), Rumania (PRECUPEȚU, 1958), Yugoslavia (SHINOHARA, 1985), and Ukraine in the USSR (ZHELOCHOVTSEV, 1988). The junior author has examined a female specimen from Bulgaria labeled "Bulg. or. Eminska Planina: Vlas, 13. V. 1987, leg. BEHNE/HEINIG" (in TAEGER coll.).

Pamphilius brevicornis HELLEN, 1948

In addition to Finland, the USSR, Czechoslovakia, Belgium and the Netherlands (see ACHTERBERG & AARTSEN, 1986), this species has been collected in the GDR (1 ♂, "Berlin, Finkenkrug, 15. V. 1915, leg. OLDENBERG" in DEI) and the FRG (1 ♂, "Crefeld, Ulbricht" in DEI).

Pamphilius festivus PESARINI et PESARINI, 1984

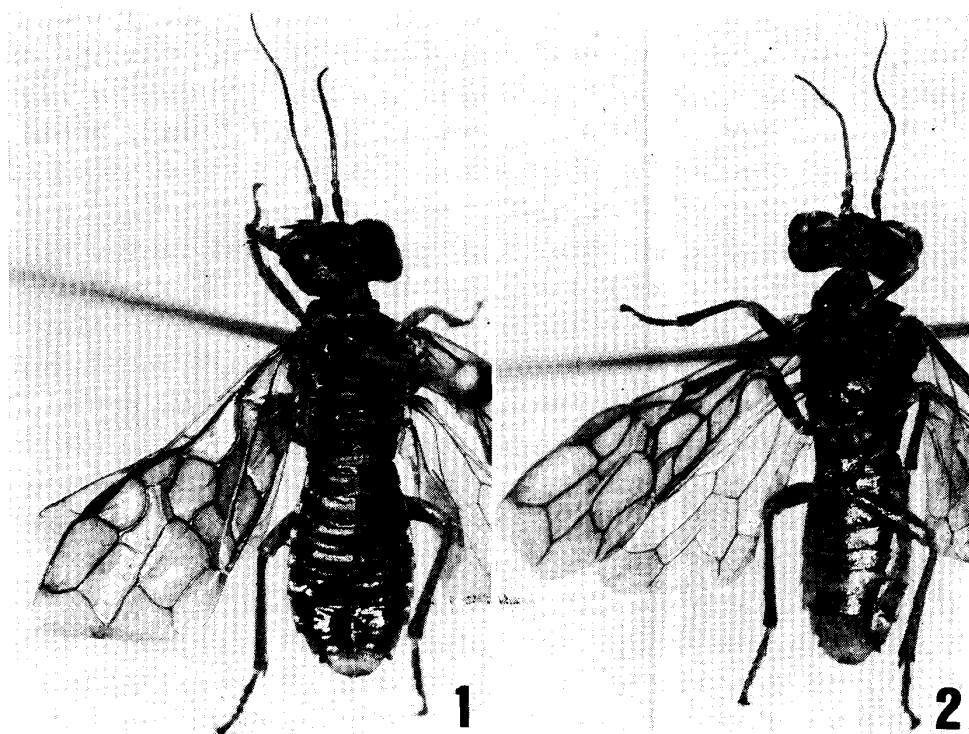
This recently described species seems to be widely distributed and apparently mixed in collections with the closely related *P. betulae* (LINNAEUS). So far the species has been recorded from Italy, the Netherlands (ACHTERBERG & AARTSEN, 1986) and France (CHEVIN, 1988), and we have examined specimens from Finland (1 ♀, "Lammi, 31. V. 1964, T. KONTUNIEMI" in SHINOHARA coll.), the GDR (1 ♀, "Berlin, Finkenkrug, 17/6, SCHIRMER" in UOP; 1 ♀, "Mark Umgebung Gross-Machnow" in HU; 1 ♀, "Leipzig-Michalk, 26. 6. 33, Diebsgr., PAUL leg." in HU), East Berlin (1 ♀, "Steglitz, 10. VI. 1924" in DEI), Poland (1 ♀, "Silesia, Coll. RHD." in HU), and Latvia in the USSR (1 ♀, "Latvia. Gem. Suntaschi, Gerki, 11. 7. 1935, O. CONDE" in HU). The Finnish specimen examined was reared from larva feeding on aspen (labeled "e. l. *Populus tremula*"). This is the first record of the host-plant of *P. festivus*.

Pamphilius lethierryi (KONOW, 1887)

Recorded so far from France, Belgium, the Netherlands, Germany, Austria, Czechoslovakia, Hungary, Caucasus in the USSR (ACHTERBERG & AARTSEN, 1986), Montenegro in Yugoslavia (ČINGOVSKI, 1968), and Italy (PESARINI & PESARINI, 1980).

The key in ACHTERBERG and AARTSEN (1986) is applicable only for identification of the females. The couplets 2 and 3 may be changed for reception of the males as follows:

2. ♀. 3a
 — ♂ (Head mainly black dorsally; face below midocular line yellow). 3b
 3a. Vertex and frons almost completely dark yellowish (fig. 137) and finely punctulate; anterior face of hind femur almost completely black; wings with (sometimes incomplete) subapical dark band; body ventrally mainly black; abdomen dorsally mainly dark yellowish. *lethierryi* (KONOW)



Figs. 1-2. *Pamphilius nigrifemoratus* n. sp., ♂, holotype.

- Vertex and frons pale yellow with six black patches (figs. 143, 149, 156) and punctate or rugose; anterior face of hind femur largely pale yellowish; wings without subapical dark band; body ventrally mainly yellow; abdomen dorsally mainly black. *sylvarum* (STEPHENS)
- 3b. Pterostigma yellowish; wings with (not very distinct) subapical dark band; gena and abdomen ventrally yellow; thorax ventrally mainly yellow; abdomen dark yellowish with dark dorsal stripe which is narrowed in the middle; scape yellow; vertex finely punctulate. *lethierryi*
- Pterostigma dark; wings without dark subapical band; gena and abdomen ventrally partly black; thorax completely black except for narrow stripe along prepectus; abdomen dorsally black with narrow pale lateral margin; scape black dorsally; vertex punctate. *sylvarum*

***Pamphilius nigrifemoratus* n. sp.**

(Figs. 1-6)

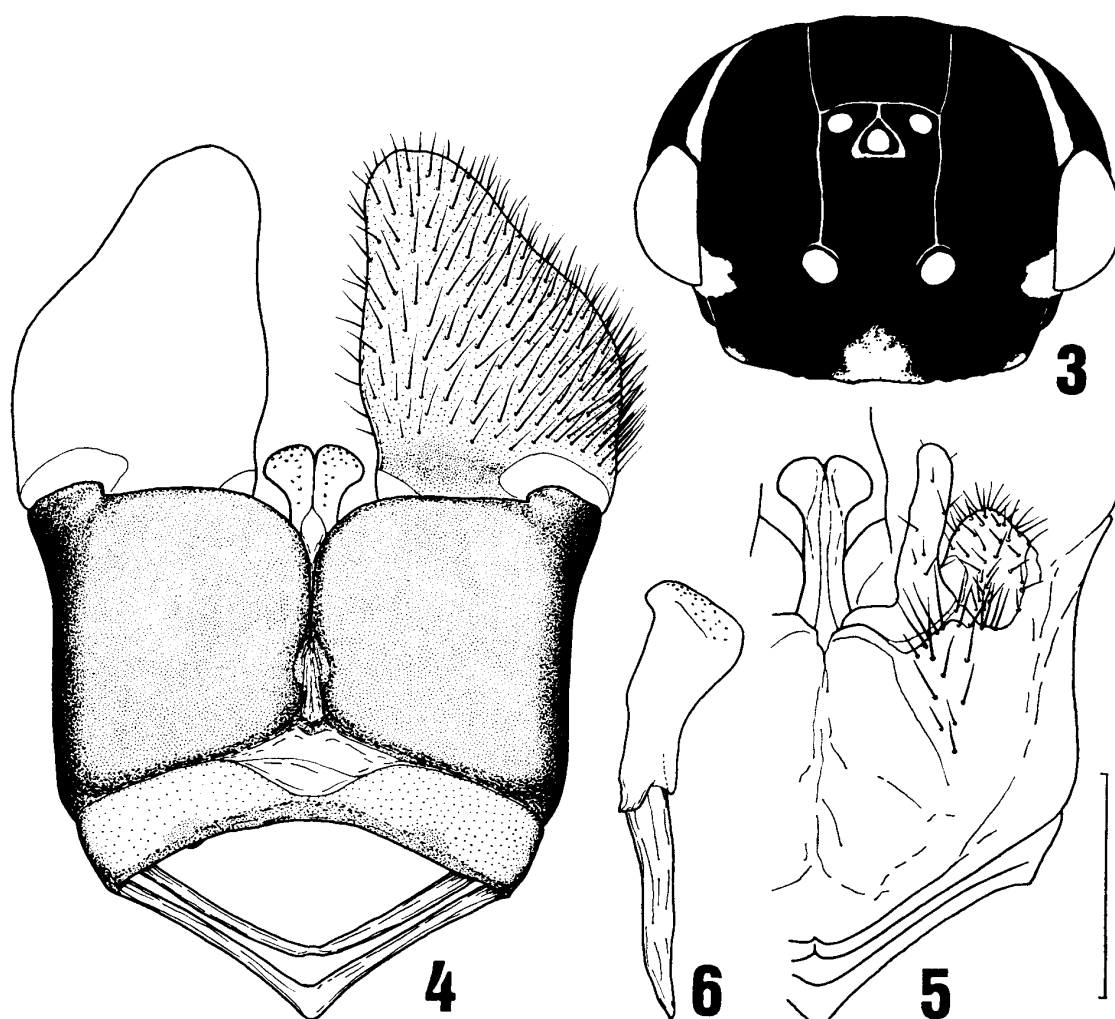
Male (holotype). Head black, with pale yellow marks as in Fig. 3 (mark on clypeus dark yellow); gena ventrally with large pale yellow mark along outer orbit; palpi pale yellow; mandibles dark yellow, with pale yellow bases and dark rufous apices, and right one with obscure blackish mark midbasally; antennal scape black, with outer surface dark yellow; pedicel and flagellum dark yellow, gradually becom-

ing blackish toward apex. Thorax black, with the following pale yellow parts: very narrow posterolateral corner of dorsal pronotum, small spot at ventral margin of lateral pronotum, tegula (except for small black spot on inner surface), small oblong spot along median line on mesoscutellum, obscure spot between cenchri on metanotum, and obscure spot on metascutellum; legs dark yellow, with following parts black: coxae (except for narrow apical margins), trochanters (except for apical parts) and femora (except for broad apices, borders of trochantelli, and anterodorsal surfaces throughout). Wings hyaline, stained with dark brown; veins dark brown to blackish brown, with C and Sc pale brown and base of 1A pale yellow; stigma pale brown, with posterior margin blackish brown. Abdomen black dorsally, with lateral margin, obscure median spot at posterior margin of 3rd segment, most of 4th and 5th segments, and broad posterior margins of 6th to 8th segments dark yellow to orange; yellow ventrally, with most of 2nd sternum, bases of 3rd to 7th sterna (more broadly on more basal segments), most of 1st and 2nd laterotergites, and spot on anterior part of each of 3rd to 8th laterotergites (larger on more basal segments) black.

Upper frons moderately convex; ocellar basin triangular in outline, represented by sharply defined straight furrows laterally (posteriorly) and ill-defined depression in front of median ocellus anteriorly; frontoclypeal crest low, with elongate, rather flattened, smooth top continuing from shallow, indistinct median fovea to swelling between antennae (frontal tubercle), and becoming very low and inconspicuous on clypeus; facial crest rather strongly convex, bluntly carinate in outer part. Upper part of head behind transverse and lateral transverse sutures bearing irregularly distributed (generally broadly spaced), very large, deep punctures, with interspaces coriaceous; frons and area from lateral transverse suture to dorsal part of paraantennal field very densely, coarsely, irregularly and rugosely punctate; ventral part of paraantennal field coarsely, transversely rugose; clypeus with rather dense, generally very large, irregular, deep punctures, with narrow interspaces between punctures rather smooth; gena heavily coriaceous, with coarse, irregular punctures; head before crassa covered with not very dense, rather short pale hairs, except for nearly glabrous ventral part of paraantennal field. Right mandible bidentate, with basal shoulder on inner edge of apical tooth distinct; tarsal claw with inconspicuous, rounded basal lobe and inner tooth distinctly shorter than outer one; forewing with cell C pilose throughout. Left antenna 20-segmented, with 3rd segment about 2.8 times as long as 4th. Subgenital plate with apical margin broadly rounded. Genitalia as in Figs. 4–6.

Measurements (in mm): Length 9.0, forewing length 8.0, head width 2.72, thorax width 2.48, scape length 0.70, pedicel length 0.29, 3rd antennal segment length 0.83, 4th antennal segment length 0.30, 5th antennal segment length 0.29, malar space 0.23, distance between proximal margins of antennal sockets 0.60, distance between antennal socket and inner orbit 0.51, vertex (length \times width) 0.70×0.81 , eye (shortest diameter \times longest diameter) 0.73×0.83 , hind tibia length 2.64, hind basitarsus length 0.68, length of 2nd–4th hind tarsal segments together 0.66, 5th tarsal segment length 0.46.

Female. Unknown.



Figs. 3–6. *Pamphilius nigrifemoratus* n. sp., ♂, holotype. — 3, Head, dorsofrontal aspect; 4, genitalia, dorsal aspect; 5, do, ventral aspect; 6, penis valve, lateral aspect. Scale for Figs. 4–6: 0.5 mm.

Distribution. Rumania.

Holotype. ♂, “Rum., Bucegi Geb., Umg. Bucsoi, 1400 m, 21. VI. 1986, leg. ZERCHE & BEHNE.” Deposited in DEI.

Host-plant. Unknown.

Remarks. The present new species belongs to the *vafer* group of BENEŠ (1976) (see also SHINOHARA, 1988b) and comes closest to the widespread Eurosiberian species, *P. pallipes* (ZETTERSTEDT) in view of the similar structure and punctuation of the head and almost indistinguishable configuration of the male genitalia. From *P. pallipes* (and from the remaining species of the *vafer* group), *P. nigrifemoratus* is distinguished by the largely black clypeus and the black-marked trochanters and femora of all legs. Several species of *Pamphilius* referred to the other species-groups (e.g., *P. sylvaticus* (LINNAEUS), *P. lethierryi* (KONOW), and *P. sylvarum* (STEPHENS) within the European

fauna) have black-marked trochanters and femora, but the combination of the long 3rd antennal segment and the largely black clypeus will easily distinguish the new species; species of the *sylvaticus* group have a short 3rd antennal segment (1.0–1.4 times as long as the 4th, SHINOHARA, 1988a) and the other species of *Pamphilius* with black-marked femora all have an entirely pale-colored clypeus.

The new species falls into neither of the sections of the 1st couplet in ACHTERBERG and AARTSEN's (1986) key to the European species of *Pamphilius*. In GUSSAKOVSKIJ's (1935) key to the Palearctic species, the new species runs to the couplet containing *P. vafer* (LINNAEUS) and *P. pallipes*, both referred to the *vafer* group and thus easily separated from *P. nigrifemoratus* by the characters given above.

Still unknown female of the new species will probably be distinguished by the same set of characters as those used for identifying the male, and our hypothesis that *P. nigrifemoratus* is a close relative of *P. pallipes* will be corroborated if the female of the new species is found to possess a large, nearly glabrous, knob-like sawsheath peg, a character peculiar to *P. pallipes* and its close allies.

Pamphilius norimbergensis ENSLIN, 1917

The senior author recently discussed the systematic position of this very rare species (SHINOHARA, 1989). The species was known from the FRG (Nürnberg), Yugoslavia (Croatia, Montenegro) and Switzerland (Delemont) (LISTON, 1987). New records are from the GDR (1 ♀, "Kyffhäuser, Südseite, 19. V. 1959, leg. Ermisch" in DEI (det. BENEŠ, 1971)) and Bulgaria (1 ♀, "Dragoman, 1–10. VI. 1989, leg. LEIDENFROST" in TAEGER coll.).

Identification of the females of this species by the key in ACHTERBERG and AARTSEN (1986) is somewhat difficult. The species runs to couplet 22, but in the coloration of the area between antennal sockets it agrees with the first section, which contains *P. latifrons* only. To make the key workable, the sentence "Area between antennal sockets of ♀ largely yellow (fig. 310)" in the first section and its counterpart in the second section should be deleted.

Pamphilius sylvarum (STEPHENS, 1835)

(=*Lyda nigricornis* Snellen van Vollenhoven, 1858)

ACHTERBERG and AARTSEN (1986) provisionally treated *nigricornis* as a valid species. In the collection of SMTD, there is a couple from Freital/Saxonia, Germany, which were collected together. Though they look very different, there is no doubt that *nigricornis* is the male of *sylvarum*, as treated by various authors in the past (e.g., KONOW, 1905; BENEŠ, 1982). See also under *P. lethierryi*.

Pamphilius thorwaldi KONTUNIEMI, 1946

Hitherto known from Finland, Germany and Czechoslovakia. The junior author

has examined a male specimen from Austria labeled "Vorarlb." (=Vorarlberg) deposited in DEI.

***Pamphilius viridipes* ACHTERBERG et AARTSEN, 1986**

This species was known only from the type series (2 females) from the Netherlands. It occurs also in the GDR. There is a female (about 80–100 years old) in DEI collected by LANGE and labeled "Erzgebirge." This specimen most likely came from the environments of Annaberg.

References

- ACHTERBERG, C. van, & B. van AARTSEN, 1986. The European Pamphiliidae (Hymenoptera: Symphyta), with special reference to the Netherlands. *Zool. Verh. Leiden*, (234): 1–98.
- BENEŠ, K., 1976. The Siberian species of the genus *Pamphilius* related to *P. vafer* (L.) (Hymenoptera, Pamphiliidae). *Acta ent. bohemoslov.*, **73**: 159–173.
- 1982. A study of the *Pamphilius sylvarum*-group (Hymenoptera, Pamphiliidae). *Ibid.*, **79**: 188–195.
- CHEVIN, H., 1988. *Pamphilius festivus* C. PESARINI et F. PESARINI, 1984, espèce nouvelle pour la France (Hymenoptera, Pamphiliidae). *Bull. Soc. ent. Fr.*, **93**: 12.
- ČINGOVSKI, J., 1968. Beitrag zur Kenntnis der Symphyten-Fauna (Hymenoptera, Symphyta) von Durmitor. *Fragmenta balcanica*, **6** [for 1967]: 81–96. (In Serbocroatian, with German summary.)
- GUSSAKOVSKIJ, V. V., 1935. Chalastogastra (pt. 1). *Faune URSS*, (n. s. 1), Insectes Hyménoptères, II(1). XVIII+453 pp. Moscou, Leningrad, Edition de l'Académie des Sciences de l'URSS. (In Russian, with German summary.)
- KLIMA, A., 1937. Pamphiliidae. In HEDICKE, H. (ed.), *Hymenopterorum Catalogus*, 3. 84 pp. 's-Gravenhage, W. Junk.
- KONOW, F. W., 1905. Hymenoptera, Fam. Lydidae. In WYTSMAN, P. (ed.), *Genera Insectorum*, (27). 27 pp. + 1 pl.
- LISTON, A. D., 1987. Vier für die Schweiz neue Blattwespen-Arten (Hymenoptera, Symphyta). *Mitt. ent. Ges., Basel*, **37**: 116–117.
- OOSTSTROOM, S. J. van, 1974. Nieuwe bladwespen voor de Nederlandse fauna (Hymenoptera, Symphyta). *Ent. Ber., Amsterdam*, **34**: 161–164.
- PESARINI, C., & F. PESARINI, 1980. Reperti interessanti di Imenotteri Synfiti Italiani (Hymenoptera, Symphyta). *Boll. Soc. ent. Ital.*, **112**: 80–89.
- PRECUPETU, A., 1958. Contribuții la studiul Familiei Pamphiliidae și Familiei Cephidae (Hymenoptera Tenthredinoidea) din Republica Populară Română. *Com. Acad. R. P. R., București*, **8**: 1044–1050.
- SHINOHARA, A., 1985. Some records of European Pamphiliidae (Hymenoptera). *Ent. Gaz.*, **36**: 161–164.
- 1988 a. The group of *Pamphilius sylvaticus* (Hymenoptera, Pamphiliidae)—Five new species and additional records from the Far East—. *Kontyû, Tokyo*, **56**: 307–320.
- 1988 b. *Pamphilius stramineipes* (Hymenoptera, Pamphiliidae) and its close relatives. *Bull. natn. Sci. Mus., Tokyo*, (A), **14**: 179–197.
- 1989. Notes on a European leaf-rolling sawfly, *Pamphilius norimbergensis* ENSLIN (Hymenoptera: Pamphiliidae). *Jpn. J. Ent.*, **57**: 127–130.
- ZHELOCHOVTSEV, A., 1988. Perepončatokrylije. *Opredelitel nasekomych evropejskoj časti SSSR*, 3(6). 272 pp. Leningrad, Nauka.